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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.           | CONFIRMATION NO. |
|---|-------------|----------------------|-------------------------------|------------------|
| 10/734,423  | 12/12/2003  | Fan Zhang            | CS03-026                      | 3913             |
| 7590 06/30/2006   |             |                      |                               |                  |
| GEORGE O SAILE<br>28 DAVIS AVENUE<br>POUGHKEEPSIE, NY 12603 |             |                      |                               |                  |
|   |             |                      | EXAMINER<br>ANDUJAR, LEONARDO |                  |
|   |             |                      | ART UNIT<br>2826              | PAPER NUMBER     |

DATE MAILED: 06/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/734,423

Applicant(s)

ZHANG ET AL.

Examiner

Leonardo Andújar

Art Unit

2826

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) 8 and 9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 4 and 6 is/are rejected.
- 7) ☒ Claim(s) 2, 5 and 7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 02/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election with traverse of Group I, claims 1-7 is acknowledged. The traversal is on the ground(s) that the subject matter of claims 1-7 is sufficiently related that a thorough and complete search for the subject matter of the elected claims would necessarily encompass a thorough and complete search for the subject matter of the non-elected claims. This is not found persuasive because referring to the restriction requirement set forth in the Office Action sent on 03/14/2006, it clearly shows that the alternative method proposed by the examiner would be distinct from the process claimed. Additionally, the search is not coextensive as evidenced by the different fields of search for the process and product as cited in the previous restriction requirement. Furthermore, Applicant has not provided a convincing argument that the materially different processes would not be suitable in producing the claimed device. Note that the unpatentability of the Group I invention would not necessarily imply unpatentability of the Group II invention. Thus the requirement is still deemed proper and is therefore made FINAL

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ibnabdeljali et al. (US 6,365,958) in view of Mori (US 6,992,392).

4. Regarding claims 1 and 4, Ibnabdeljalil (e.g. fig. 7A-7c) show a method for creation of an ring 105 surrounding a guard ring 104 of a semiconductor die, comprising: providing a substrate 60 comprising semiconductor devices (col. 1/lls. 1-10) being accessible by points of electrical contact (e.g. contact 28 in fig. 2b; col. 5/lls. 20-30, 61-65; col. 6/lls. 44-50); provided in or over the substrate, the semiconductor devices comprising a semiconductor die 71 by being surrounded by a guard ring 104; creating at least one level of interconnect metal 104 (inner 104) with corresponding interconnect vias over the substrate aligned with the points of electrical contact; creating a surrounding the guard ring with a ring 105 comprising a trench filled 76, and located over the lateral surface area of the semiconductor die; and singulating the substrate into semiconductor die by sawing along sawing paths (col. 1/lls. 14-30). Ibnabdeljalil does not teach that the ring 105 is made of oxide. Nevertheless, Mori (e.g. fig. 5) teaches a method that includes a protection ring 22 made of oxide (col. 4/lls. 5-65). Also, this type of embodiment may prevent wiring deformation in addition to suppress negative effects of the of compression forces (col. 4/lls. 25-55). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the ring 105 disclosed by Ibnabdeljalil of oxide to prevent wiring deformation in addition to suppress negative effects of the of compression forces as taught by Mori.

5. Claims are rejected under 35 U.S.C. 103(a) as being unpatentable over Ibnabdeljali et al. (US 6,365,958) in view of Mori (US 6,992,392) further in view of Lee et al. (US 6,488,113).

6. Regarding claims 4 and 6, Ibnabdeljalil in view of Mori teaches most aspects of the instant invention including a oxide ring made of silicon oxide but does not teach that the silicon oxide is an undoped silicon glass (USG). Nevertheless, Lee teaches that silicon oxide can be produced as undoped silicon glass (col. 1/ll. 67-col. 2/ll. 6). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the silicon oxide ring disclosed by Ibnabdeljalil in view of Mori of USG as suggested by Lee to provide be an enhanced structural stability.

#### ***Allowable Subject Matter***

7. Claims 2, 5 and 7 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

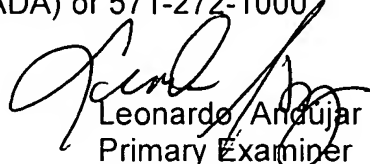
#### ***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonardo Andújar whose telephone number is 571-272-1912. The examiner can normally be reached on Mon through Thu from 9:00 AM to 7:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J. Flynn can be reached on 571-272-1915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2826

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Leonardo Andujar  
Primary Examiner  
Art Unit 2826